

## CLAIMS

1. A content management system for use in news media production, comprising:
  - 5 data storing means, data retrieving means and data processing means,
  - a database system adapted to store publishing content objects (PCOs) and metadata, the metadata being associated with PCOs in the content management system,
  - 10 a number of workstations,
 characterised in that
  - 15 the PCOs are arranged to be media neutral so as to enable re-use of the PCOs in publications of multiple media, and that
  - the content management system further facilitates planning and co-ordinating of usage of PCOs in one or more publications.
  - 20
2. A content management system according to claim 1, wherein the PCOs are arranged to be media neutral by comprising content elements divided by their function.
- 25 3 A content management system according to claim 1, wherein the PCOs are arranged to be media neutral by storing or managing them using an XML based structure.
4. A content management system according to claim 1, wherein the planning and co-ordinating of usage of PCOs in one or more publications is achieved by maintaining
  - 30 relations between anticipated news stories and said publications.
5. A content management system according to claim 1, wherein the planning and co-ordinating of usage of PCOs comprises tentative or dynamic planning and co-ordinating of usage of the PCOs and/or fixed planning and co-ordinating of usage of
  - 35 the PCOs.
6. A content management system according to claim 1, wherein the planning and co-ordinating of usage of PCOs comprises approximate and/or specific placement of PCOs, said placement referring to physical or visual location of PCOs in one or more
  - 40 publications being planned.

7. A content management system according to claim 1, wherein the planning and co-ordinating of usage of PCOs comprises planning and co-ordinating of PCOs that are only planned for creation or still under creation or already existing PCOs.
- 5 8. A content management system according to claim 1, wherein the PCOs comprise content of types used in news media selected from the group consisting of: daily or weekly newspapers, magazines, TV and radio stations, Internet sites and other electronic news media.
- 10 9. A content management system according to claim 1, wherein the planning and co-ordinating of usage of PCOs is performed by associating PCOs and information relating to PCOs with one or more layout budgets or lists, each layout budget or list having at least one publication associated with it, and each layout budget or list representing the planned content of the associated publication(s) or a part or section thereof.
- 15 10. A content management system according to claim 1, wherein layout budgets or lists have at least one publication date and/or time associated with them, the publication date and/or time indicating the publication date and/or time of a publication associated with the layout budget or list.
- 20 11. A content management system according to claim 1, wherein PCOs are added to or removed from layout budgets or lists or wherein information relating to PCOs is changed on layout budgets or lists, thereby facilitating dynamic planning of content intended for use in publications.
- 25 12. A content management system according to claim 1, wherein metadata are used for approving or suspending PCOs associated with layout budgets or lists, thereby facilitating tentative or preliminary planning of individual PCOs intended for use in publications.
- 30 13. A content management system according to claim 1, further comprising means for filtering or sorting of PCOs based on their metadata, thereby facilitating presentation of an output according to said filtering or sorting.
- 35 14. A content management system according to claim 1, wherein metadata are used for ranking or prioritising PCOs by associating one rank or priority out of a plurality of ranks or priorities with the metadata for a given PCO.
- 40 15. A content management system according to claim 14, further comprising means for arranging the ranks or priorities of PCOs in a hierarchical structure.

16. A content management system according to claim 1, further comprising means for associating a size with each PCO, the size indicating physical or visual space or time duration of the PCO when appearing in a publication.
- 5 17. A content management system according to claim 1, further comprising means for associating a size with each PCO, the size indicating actual measured size or a planned size of the PCO when appearing in a publication.
18. A content management system according to claim 1, wherein a layout budget or  
10 list has a predefined maximum total size indicating the space or time available within a publication or a part or a section thereof being associated with the layout budget or list.
19. A content management system according to claim 1, wherein at least one  
15 workstation provides access to the database system and all PCOs managed in the database system, irrespective of the storage location of any particular PCO.
20. A content management system according to claim 1, wherein the database system comprises a plurality of databases.
- 20 21. A content management system according to claim 20, wherein the plurality of databases is physically or geographically disparate.
22. A content management system according to claim 20 , wherein each database of  
25 the plurality of databases is adapted to store PCOs and associated metadata for a particular enterprise or a branch of an enterprise.
23. A content management system according to claim 20 , wherein each database of the plurality of databases comprises a searchable index of the metadata and/or  
30 content associated with the PCOs stored in that database.
24. A content management system according to claim 23 , wherein the searchable indices are synchronised into a consolidated index, thereby facilitating a consolidated access to or view of the PCOs stored in the plurality of databases.
- 35 25. A content management system according to claim 20 , wherein a central searchable index of metadata and/or content associated with the PCOs stored in the plurality of databases is provided, thereby facilitating a consolidated access to or view of the PCOs stored in the plurality of databases.
- 40

26. A content management system according to claim 1, wherein a consolidated access to or view of PCOs is provided, irrespective of their storage location or database.

5 27. A content management system according to claim 1, further comprising means to support users from at least one workstation to perform the management task of tracking the status of one or more PCOs.

28. A content management system according to claim 1, further comprising means to  
10 support users to perform, from at least one workstation, the management task of associating metadata with one of a plurality of desk budgets, the desk budgets providing a list of PCOs that are planned or under creation within a given desk or department.

15 29. A content management system according to claim 1, further comprising means for supporting users from at least one workstation to perform the management task of organising PCOs into groupings.

30. A content management system according to claim 29, wherein the means for  
20 organising PCOs into groupings comprises

means for defining projects or projects and sub-projects in the content management system, and

25 means for including one or more PCOs in one or more projects or sub-projects, thereby facilitating an overview of PCOs involved in larger news events.

31. A content management system according to claim 30, further comprising means for arranging the projects and sub-projects in a hierarchical structure.

30 32. A content management system according to claim 30 , further comprising means for filtering PCOs by project or sub-project, thereby facilitating a presentation of PCOs related to the project or sub-project.

35 33. A content management system according to claim 30 , wherein metadata are associated with projects or sub-projects, thereby providing information relating to the project or sub-project.

34. A content management system according to claim 33, wherein at least part of the  
40 metadata associated with a given project or sub-project is applied to the PCOs included in that project or sub-project.

35. A content management system according to claim 29 , wherein the means for organising PCOs into groupings comprises means for associating a selected plurality of PCOs, irrespective of other groupings in which they might be included, so as to form an association, thereby facilitating any subject, topical or other desired relationship  
5 between PCOs.

36. A content management system according to claim 35, further comprising means for filtering PCOs by association, thereby facilitating a presentation of associated PCOs.  
10

37. A content management system according to claim 35 , further comprising means for linking between a PCO and any of its associated PCOs, thereby facilitating automatic or simplified maintenance of link relationships between associated PCOs.

15 38. A content management system according claim 35 , further comprising means for assembling associated PCOs into packages intended or suggested for collective publication.

39. A content management system according to claim 35 , further comprising means  
20 for describing the category or nature of a given PCO's relationship with its associated PCOs.

40. A content management system according to claim 1, wherein the database system comprises means for creating one or more assignments, each assignment being an  
25 administrative entity for managing one or more PCOs, the PCO(s) being planned for creation or still under creation or already existing PCO(s).

41. A content management system according to claim 40, further comprising means for associating metadata with assignments.  
30

42. A content management system according to claim 41, wherein at least part of the metadata associated with an assignment applies to one or more PCOs being managed through that assignment as well as to the assignment itself.

35 43. A content management system according to claim 41 , wherein the metadata comprises at least one of the following types of information relating to assignment management:

- an address and/or name of a geographical location of a news event
- 40 • one or more people expected to attend a news event
- a start time and/or end time and/or duration of a news event
- one or more contacts at a news event

- one or more appointments at a news event
- one or more items of research information or interviews or links to such items
- a deadline

5 44. A content management system according to claim 1, wherein the metadata comprises at least one of the following types of information:

- a slug or name
- a description
- 10 • an origination
- a type
- a status
- a reference to at least one publication
- keywords
- 15 • an abstract or summary
- notes
- a modification log
- access control information
- an originating newsroom
- 20 • an originating desk
- an assignment editor
- an author
- a deadline
- intellectual property rights

25

45. A content management system according to claim 1, wherein the metadata comprises at least one of the following types of information referring to a publication:

- a name
- 30 • a publication date and/or time
- a revision specific edition
- a geographical or topical edition
- a logical or physical storage address in a computer system
- a specific physical or visual placement or location within the publication
- 35 • a deadline
- a layout budget or list associated with the publication
- a size of the publication or within in the publication
- a ranking or priority within the publication

40 46. A content management system according to claim 1, further comprising means for ensuring that metadata contain only valid combinations of information.

47. A content management system according to claim 1, wherein the metadata comprises at least one of the following types of information relating to access control:

- permissions to view the existence of an item in the database system
- 5 • permission types and/or levels of access to an item in the database system
- rules specifying conditions for specific permissions to take effect on an item in the database system

48. A content management system according to claim 1, wherein at least part of the  
10 metadata are stored as database fields in the database system.

49. A content management system according to claim 1, wherein at least part of the metadata are stored as tags and/or attributes within the content associated with PCOs.  
15

50. A content management system according to claim 1, wherein the database system comprises means for enabling a system administrator or workstation user to define one or more additional metadata fields, thereby facilitating customised information to be stored in the database system.  
20

51. A content management system according to claim 1, wherein a set of metadata fields is definable by a system administrator or workstation user.

52. A content management system according to claim 50, wherein substantially all  
25 metadata fields are definable by a system administrator or workstation user.

53. A content management system according to claim 1, wherein a set of metadata fields is definable by the content type of a given PCO.

30 54. A content management system according to claim 1, wherein at least some PCOs or other database items stored in the database system are associated with specific icons, thereby allowing a workstation user to identify the type of item by a visual appearance of its icon.

35 55. A content management system according to claim 1, wherein changes to metadata or changes to content associated with PCOs are logged during a news media production workflow.

40 56. A content management system according to claim 1, wherein automation rules defined by system administrators or by workstation users enable triggering of automatic actions based on changes to metadata values or changes to content associated with PCOs.

57. A content management system according to claim 56, wherein at least one of the following tasks are triggered when the condition of an automation rule is met:

- 5 - notifying or alerting users
- triggering workflow events
- triggering user specified actions
- triggering automatic archival or purging
- triggering a routing of PCOs or other database items

10

58. A content management system according to claim 1, wherein production and/or publication of media output using the PCOs stored in the database system is facilitated by one or more production systems integrated with the database system.

- 15 59. A content management system according to claim 58, wherein PCOs or at least some metadata associated with PCOs stored in the database system are accessible from a production system.

- 20 60. A content management system according to claim 58 , wherein PCOs or at least some status or production data or other metadata from a production system are accessible from the content management system.



A content management system for use in news media production, including data storage data retrieval data processing where a database system is adapted to store publishing content objects (PCOs) and metadata. The metadata may be associated with PCOs in the content management system. The system may also include a number of workstations where the PCOs are stored in a media neutral format to enable re-use of the PCOs in publications of multiple media. The content management system may further be adapted to perform a task of planning and co-ordinating usage of PCOs in one or more publications